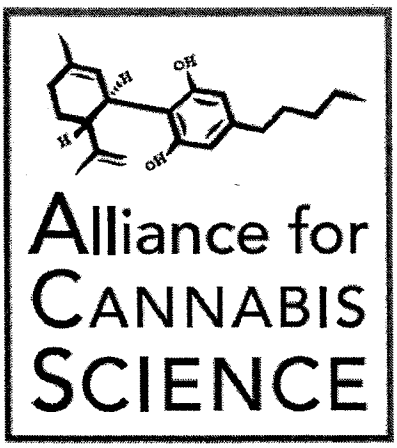

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The Basics

Cannabis is the botanical name for marijuana.

The plant, cannabis, is a source of chemical compounds called cannabinoids.

The human body also creates cannabinoids, and we have cannabinoid receptors. Together, the cannabinoids and their receptors make up **the human cannabinoid system**.

Just as there was a time that we didn't know we had immune systems or hormonal systems, until 1988 we didn't know that we had cannabinoid systems.

The cannabinoids from the cannabis plant fit nicely into human cannabinoid receptors. Thus, the cannabinoids from the cannabis plant can be utilized by the human cannabinoid system.

One of the cannabinoids in cannabis – THC - creates a euphoric effect. The other cannabinoids in cannabis do not. CBD is another cannabinoid in cannabis. CBD has medicinal applications both in conjunction with THC, but also independently of it. Other cannabinoids, such THCV, also have likely medicinal applications though there is less data available.

The cannabinoid system participates in physiological functions like appetite, sleep, neuronal growth & migration, cell death, lipid metabolism, pain response, and inflammation, to name only a few.

The existence of the cannabinoid system is not theoretical. It is not even controversial. To find accredited, peer-reviewed material on the cannabinoid system, see PubMed: http://www.ncbi.nlm.nih.gov/pubmed/

More on the Human Cannabinoid System

Our bodies have cannabinoid receptors, that is, places for the cannabinoids to "plug in." Two receptors that we know about are the CB1 receptor and the CB2 receptor. CB1 receptors are found in the brain, including the basil ganglia, the cerebellum, and hypothalamus, among others. They are also present in high densities at "relay stations in the neural pathways that transmit pain information to the central nervous system." The female reproduction system is also a hot spot for cannabinoid receptors. CB2 receptors are found primarily in peripheral tissues, particularly on while blood cells and various components of the immune system.

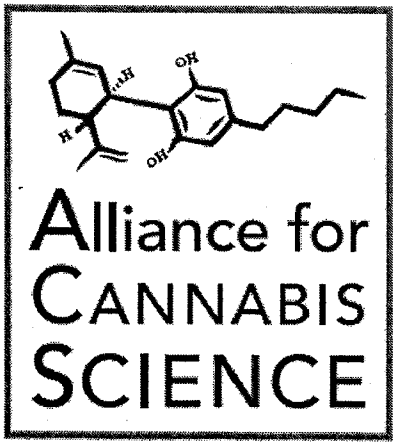
Cannabinoids are generally considered inhibitors. They damp down neurotransmitter release. But this doesn't mean they necessarily damp down neural activity. If you inhibit an inhibitor, you get a release. It's like two negatives equaling a positive.

There are no cannabinoid receptors in the medulla oblongata, the part of the brainstem responsible for respiratory and cardiovascular function. This is likely why there are no fatalities from cannabis use. The big risk with many drugs and pharmaceuticals is respiratory and/or cardiovascular failure. Not so with cannabis. Numerous sources cite that the lethal dose of cannabis would be 40,000 times greater than the dose it takes to create the euphoric effects.

Our bodies don't store cannabinoids. We create them on-demand, such as when the brain's nerve cells begin to fire too much, as in the case of seizures, stress, or an impact to the brain.

Source: Iversen, Leslie. *The Science of Marijuana*, Oxford University Press, 2008.

For more information, contact Kate Cholewa, Alliance for Cannabis Science, 406.459.4092, allianceforcannabisscience@gmail.com



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The Alliance for Cannabis Science formed to bring the perspective of science and standards in regards to the medical marijuana issue to the Montana Legislative session.

For the past two years, neither state statutes nor the market (patients) were able to impose standards on the unexpectedly burgeoning medical cannabis marketplace. The state statutes didn't/don't define parameters, standards, and systems for the new dynamics of the market. Patients have no ability to shop around or compare businesses and make informed consumer choices. **The only pressure for standards came from those in the medical cannabis marketplace who thrive for excellence for the sake of excellence itself.**

The Alliance for Cannabis Science represents such people, including producers, medical professionals, testing labs, and manufacturers.

The field of cannabis science and cannabis medicine has grown significantly in the past several years. The Montana medical cannabis industry needs statutory infrastructure that creates a system that supports standards and excellence. It's true, some in the industry have not lived up to reasonable standards. Some probably aren't even aware of what reasonable standards are.

What does it mean to do this well? – is the question the Alliance asks.

Policies that make it "harder" to be a patient or run a business don't necessarily keep "fake patients" and bad business operators out. Policies directed at making functionality harder, but not better, serve to direct the efforts of bad actors within the industry at circumventing rules, which is what led to many of the issues we need currently to

address. With standards, effort, by necessity, must instead be directed towards high performance. Some will live up to standards of accountability, safety, and service. Some will not.

There will also be those who surpass the standards and become the leaders in the industry, setting the bar higher than the statutes.

We are happy to share with you what we know about the science, economics, and industry structure of the medical cannabis marketplace in Montana and work with you to bring to it legitimacy and standards.

For more information, contact Kate Cholewa, Alliance for Cannabis Science, 406.459.4092, allianceforcannabisscience@gmail.com